Claims

[1] A process for producing a hydrolyzable silicon group-containing oxyalkylene polymer, which comprises using, as a starting material, an oxyalkylene polymer in which a first oxyalkylene polymer having at least two active hydrogen groups and a second oxyalkylene polymer having one active hydrogen group coexist, and converting the active hydrogen groups to hydrolyzable silicon groups.

[2] The process for producing the hydrolyzable silicon group-containing oxyalkylene polymer according to claim 1, wherein a GPC (gel permeation chromatography) peak top molecular weight of the second oxyalkylene polymer starting material is not more than 0.6 times a GPC peak top molecular weight of the first oxyalkylene polymer starting material.

[3] The process for producing the hydrolyzable silicon group-containing oxyalkylene polymer according to claim 1 or 2, wherein a viscosity of the oxyalkylene polymer starting material in which the first and second oxyalkylene polymers coexist is at most 3/4 of a viscosity of the first oxyalkylene polymer starting material.

[4] The process for producing the hydrolyzable silicon group-containing oxyalkylene polymer according to any one of claims 1 to 3, wherein an oxyalkylene polymer in which 100 parts by weight of the first oxyalkylene polymer and 300 parts by weight or less of the second oxyalkylene polymer coexist is

used as a starting material.

[5] The process for producing the hydrolyzable silicon group-containing oxyalkylene polymer according to any one of claims 1 to 4, wherein the oxyalkylene polymer starting material in which the first and second oxyalkylene polymers coexist is obtained by reacting the first initiator having at least two active hydrogen groups with an alkylene oxide in the presence of a catalyst to form the first oxyalkylene polymer, then adding the second initiator having one active hydrogen group and further reacting the alkylene oxide to form the second oxyalkylene polymer.

[6] The process for producing the hydrolyzable silicon group-containing oxyalkylene polymer according to claim 5, wherein a feed rate of the alkylene oxide per molar amount of the second initiator after addition of the second initiator is not more than 0.6 times a feed rate of the alkylene oxide per molar amount of the first initiator before addition of the second initiator.

[7] The process for producing the hydrolyzable silicon group-containing oxyalkylene polymer according to any one of claims 1 to 4, wherein the oxyalkylene polymer starting material in which the first and second oxyalkylene polymers coexist is obtained by causing the first and second initiators to coexist and then reacting these initiators with the alkylene oxide in the presence of a catalyst.

[8] The process for producing the hydrolyzable silicon group-containing oxyalkylene polymer according to any one of claims 1 to 7, wherein the second oxyalkylene polymer starting material is produced from a second initiator represented by formula 1.

R^1-OH ... formula 1

(wherein R^1 is a monovalent organic group free from an unsaturated group and containing at least one selected from the group consisting of carbon, hydrogen, oxygen and nitrogen as a constituent atom.)

[9] The process for producing the hydrolyzable silicon group-containing oxyalkylene polymer according to any one of claims 5 to 8, wherein the catalyst is a double metal cyanide complex catalyst.

[10] The process for producing the hydrolyzable silicon group-containing oxyalkylene polymer according to any one of claims 1 to 9, which comprises a step of converting the active hydrogen group of the oxyalkylene polymer to a group represented by formula 2.

-O-R^2 ... formula 2

(wherein R^2 is a monovalent organic group having an unsaturated bond and containing at least one selected from the group consisting of carbon, hydrogen, oxygen and nitrogen as a constituent atom.)

[11] The process for producing the hydrolyzable silicon

group-containing oxyalkylene polymer according to claim 10, wherein after the active hydrogen group of the oxyalkylene polymer is converted to the group represented by formula 2, the hydrolyzable silicon group is introduced.

$-O-R^2$ ... formula 2

(wherein R^2 is a monovalent organic group having an unsaturated bond and containing at least one selected from the group consisting of carbon, hydrogen, oxygen and nitrogen as a constituent atom.)

[12] The process for producing the hydrolyzable silicon group-containing oxyalkylene polymer according to any one of claims 1 to 9, wherein the active hydrogen group of the oxyalkylene polymer is reacted with a compound represented by formula 3 to introduce the hydrolyzable silicon group.

$R_{a-3}-SiX_a-R^3NCO$ ... formula 3

(wherein R is a substituted or unsubstituted monovalent organic group having from 1 to 20 carbon atoms, X is a hydrolyzable group, a is 1, 2 or 3, and R^3 is a substituted or unsubstituted divalent organic group having from 1 to 20 carbon atoms.)

[13] A room temperature-curing composition comprising the hydrolyzable silicon group-containing oxyalkylene polymer produced by the process according to any one of claims 1 to 12.

[14] The room temperature-curing composition according to claim 13, in which the room temperature-curing composition

is substantially free from a plasticizer.